value to the commercial interests of this city and vicinity. Copies of the order were posted on the Signal Service bulletin-boards and given to the press, and to several railroad companies, by whom they telegraphed over this state and portions of Minnesota and Iowa. Shippers of fruit saved considerable perishable property by heeding the warning."

Professor P. H. Mell, jr., director of the Alabama Weather Service, in his report for November, 1884, referring to weather forecasts by means of railway signals, reports the following:

A careful examination of the meteorological reports from all quarters of the state shows the verification of the weather predictions to be 92 per cent. and of the temperature 70 per cent.

The director is gratified to perceive that the public are greatly interested in these predictions. Several stations not on the line of the railroads desire the telegrams, and stations in Georgia on the Atlanta and West Point road have sent a request for them. The stations already equipped complain greatly if the telegrams are not received promptly; and all reports show a due appreciation of the practical benefits derived from the system, and of the liberality of the Chief Signal Officer in so generously furnishing Alabama with the full advantages of these predictions.

TEMPERATURE OF WATER.

The following table shows the highest and lowest temperatures of the water at the several stations; the monthly range of water temperature; the average depth at which the observations were made; and the mean temperature of the air at the stations:

Temperature of water for November, 1884.

Station.	Temperature at bottom.		Range.	Average depth, feet and inches.		Mean temperature of the air at station.
	Max.	Min.				
	°	°	°	ft.	in.	°
Atlantic City, New Jersey	56.9	46.9	10.0	2	4	45.4
Alpena, Michigan	38.8	30.5	8.3	11	9	31.7
Augusta, Georgia	67.0	49.8	17.2	5	2	54.8
Baltimore, Maryland	58.3	46.4	11.9	10	1	46.4
Block Island, Rhode Island	52.4	44.2	8.2	6	9	45.0
Boston, Massachusetts	48.3	31.0	17.3	21	10	41.1
Buffalo, New York	51.8	37.5	14.3	10	7	37.9
Canby, Fort, Washington Territory	52.3	48.0	4.3	17	11	50.9
Cedar Keys, Florida	71.3	60.2	11.1	9	7	63.7
Charleston, South Carolina	68.8	58.6	10.2	40	4	59.1
Chicago, Illinois	48.3	33.8	14.5	7	3	39.6
Chincoteague, Virginia	61.9	44.3	17.6	3	11	49.0
Cleveland, Ohio*	52.4	39.4	13.0	14	0	38.8
Detroit, Michigan	47.2	33.6	13.6	23	9	39.6
Delaware Breakwater, Delaware	69.2	47.2	22.0	8	8	48.0
Duluth, Minnesota	42.5	35.3	7.2	9	11	29.1
Eastport, Maine	47.4	43.1	4.3	15	11	36.4
Escanaba, Michigan	46.8	35.0	11.8	17	5	30.3
Galveston, Texas	68.0	56.1	11.9	12	4	61.9
Grand Haven, Michigan	45.6	32.4	13.2	19	0	38.3
Indianola, Texas	72.5	57.5	15.0	8	4	62.7
Jacksonville, Florida	70.7	64.2	6.5	18	0	61.7
Key West, Florida	79.0	75.4	4.2	17	2	74.9
Mackinaw City, Michigan	45.9	35.1	10.8	10	0	34.3
Macon, Fort, North Carolina	67.8	55.5	12.3	6	4	55.8
Marquette, Michigan	42.8	37.0	5.8	10	0	31.3
Milwaukee, Wisconsin	48.4	33.4	15.0	8	0	35.0
Mobile, Alabama	69.8	57.7	12.1	15	7	55.5
New Haven, Connecticut	51.3	41.4	9.9	15	11	40.9
New London, Connecticut	53.8	46.2	7.6	11	6	42.9
New York City	53.0	43.5	9.5	15	10	43.2
Norfolk, Virginia	59.4	51.4	8.0	17	0	52.6
Pensacola, Florida	71.9	59.3	12.6	17	3	57.6
Portland, Maine	47.4	38.9	8.5	16	4	39.1
Portland, Oregon	50.2	44.7	5.5	52	6	46.7
Sandusky, Ohio	58.0	33.9	24.1	12	0	40.0
Sandy Hook, New Jersey	55.3	43.1	12.2	1	6	44.5
San Francisco, California	57.5	55.3	2.2	31	10	56.5
Savannah, Georgia	68.7	56.6	12.1	10	5	58.7
Smithville, North Carolina	67.3	58.0	9.3	10	8	55.5
Toledo, Ohio	47.5	32.4	15.1	10	8	40.0
Wilmington, North Carolina	67.0	56.0	11.0	18	4	57.1

* Record for twenty-eight days.

ATMOSPHERIC ELECTRICITY.

AURORAS.

But few auroral displays, none of which were noted for brilliancy or extent of observation, occurred during November. On the evening of the 2d, a display occurred which was observed at Fort Bennett, Dakota; Winnipeg, Manitoba; Ann Arbor, Michigan; Toronto, Ontario; Mountainville, New York, and at numerous stations in New England. The following reports relate to this display.

Fort Bennett, Dakota, 2d: a faint auroral display was observed in the northwestern sky at 7.20 p. m.

Ann Arbor, Michigan, 2d: auroral light visible from 6 to 8 p. m.

Toronto, Ontario: auroral light was observed on the 2d, viz: from 8.30 to 8.15 p. m., fine display of streamers and patches of aurora; 9.30 p. m. fine curtain moving west. (Canadian Weather Review.)

Providence, Rhode Island, 2d: auroral beams were seen at 9 p m., during bright moonlight; no arch was discernible.

Mountainville, New York, 2d: "aurora streaming up from west to east during the evening."

Point Judith, Rhode Island, 2d: an auroral display began at 6.42 p. m., at first consisting of streamers of yellow, blue, and green, having a waving motion. At 7.08 p. m. the streamers disappeared, leaving a diffused light which remained until 10.05 p. m., when a narrow arch appeared for about five minutes; between 10.12 and 10.25 p. m. beams of bright yellow were observed; at midnight only a faint light remained.

Thatcher's Island, Massachusetts, 2d: traces of an aurora were observed from 6.30 to 9.30 p. m.

Eastport, Maine, 2d: a brilliant auroral arch of about 25° altitude was observed from 6 to 7 p. m.

Cornish, Maine, 2d: auroral streamers were visible at 5.30 p. m.

Block Island, Rhode Island, 2d: a brilliant auroral arch, extending from northwest to northeast and to an altitude of 10°, was observed at 6.45 p. m.; beams of bright blue, changing to light green, shot up from the arch to an altitude of 30°.

Cambridge, Massachusetts, 2d: fine auroral streamers were observed at 6.30 p. m.

Portland, Maine, 2d: a few auroral streamers were observed from 9.15 to 9.45 p. m., at the latter hour clouds obscured the display.

Gardiner, Maine, 2d: a brilliant aurora appeared at 6.15 p. m.; at 6.30 two arches were visible with beams shooting upward; at 7 p. m. the arches had disappeared but a bright light was still visible, although the full moon shone brightly; at 7.15 the aurora had disappeared.

Auroral displays occurred on other dates as follows:

Omaha, Nebraska: the operators of the Western Union telegraph company report that during the night of the 1–2d, the telegraph wires were sensibly affected; the disturbance was supposed to have been due to the influence of an aurora.

Woodstock, Vermont: an aurora is reported to have been observed on the 8th.

Fort Totten, Dakota: a faint auroral light was observed in the north from 6.30 to 10 p. m. on the 9th.

Cambridge, Massachusetts, 9th: a low auroral arch was visible at 8.15 p. m.; at 11 p. m. it had disappeared.

Gardiner, Maine, 9th: faint auroral beams were observed at 6.45 p. m.; the display disappeared soon after 9 p. m.

An auroral display was also observed at Cornish, Maine, on the evening of the 9th.

Fort Totten, Dakota: light traces of an aurora were observed at 9 p. m. on the 10th.

North Colebrook, Connecticut: an aurora was observed at 11.50 p. m. on the 11th.

At Winnipeg, Manitoba, auroral displays were observed on the evenings of the 13th and 14th.

Moorhead, Minnesota, 17th: a faint aurora was visible from 8.45 to 10.15 p. m., consisting of a pale glow reaching from north to northeast, and to an altitude of 35°; a few slender streamers were observed from 8.45 to 9.10 p. m.

At Fort Totten, Dakota, an auroral arch was observed in the north from 8.30 to 11.20 p. m. on the 17th; and at Cambridge, Massachusetts, at 11 p. m. on the same date, a low auroral arch was visible.

Manistique, Michigan: a diffuse auroral light was visible in the north on the evening of the 17th, from 8 p. m. until midnight.

Gardiner, Maine, 18th: bright aurora at 8 p. m.; at 9 p. m., it had disappeared.